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EXAMINER	
SMITH, JOSHUA Y	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/727,726	KUURE ET AL.	
	Examiner	Art Unit	
	JOSHUA SMITH	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/19/2008 has been entered.

- **Claims 1-22 are pending.**
- **Claims 1-22 stand rejected.**

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell et al. (Document Number: EP 1 006 695 A1) in view of Bender (Patent No.: US 6,377,814 B1) and Soulabail et al. (Pub. No.: US 2002/0071415 A1), hereafter referred to as Forssell, Bender, and Soulabail, respectively.

As for Claim 1, Forssell teaches in paragraph [0015], lines 47-48, "uplink resource allocation" occurs when the "Mobile Station (MS) requests radio resources". Forssell also teaches in paragraph [0026], line 15, "Downlink radio resource allocation". Forssell also teaches in paragraph [0007], from line 58 of page 2 to line 1 of page 3, "packet data transmission between mobile data terminals", implicitly teaching that transmissions between mobile terminals involve an uplink for a transmitting mobile station and a downlink for a receiving mobile station (substantively the same as "communicating through a dedicated channel comprising both an uplink and at least one downlink" in the instant invention).

Forssell shows in paragraph [0006], line 33, and Fig. 1a, page 14, "the core network of a cellular system 10" (substantively the same as "a core network interconnecting them" in instant invention).

Forssell shows in paragraph [0007], lines 51-55, and Fig. 1b, page 14, the "operational environment comprises one or more subnetwork service areas," which are interconnected by a backbone network and where each "subnetwork comprises a number of packet data service nodes", which provide a packet service for mobile data terminals 151 via several base stations 152" (substantively the same as "a server function or server … controls a flow of data packets" in the instant invention). Forssell fails to teach keeping up a dedicated channel downlink from a core network by sending post-speech packets for a time of duration, and keeping up a dedicated channel after a last speech sample packet is sent downlink from a core network for a time of such duration that a new uplink can be established utilizing a downlink from a core network. Bender teaches keeping up a dedicated channel downlink from a core network by sending post-speech packets for a time of duration, and Soulabail teaches keeping up a dedicated channel after a last speech sample packet is sent downlink from a core network for a time of such duration that a new uplink can be established utilizing a downlink from a core network.

In the same field of endeavor, Bender teaches in column 3, line 63 to column 4, line 6, if a maximum-zero-traffic period elapses without a data frame being sent to an access terminal, a wireless network transmits a null data frame to a subscriber stations, and if an access terminal does not successfully decode any data frame or null frame on

a traffic channel for a specified number maximum-zero-traffic periods, the access terminal declares a loss of its connection with a base station and stops transmitting, and, in column 6, line 59 to column 7, line 3, if a forward link data queue for an access terminal remains empty such that a maximum-zero-traffic period might elapse without sending a data packet to the access terminal, a wireless network transmits a "null data packet" to the access terminal, and where a supervisory period is at least twice as long as a maximum-zero-traffic period, to allow an access terminal to lose (due to communication error) a few null data packets without immediately releasing its connection (keeping up a dedicated channel downlink from a core network by sending post-speech packets for a time of duration). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are maintained, and resources of connections that are inactive for too long or become out of range are released, which can be incorporated into the TDMA aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

In the same field of endeavor, Soulabail teaches in paragraphs [0034], [0048], and [0049], and in FIG. 3 and FIG. 6, a guard period (item 36, FIG. 3) is a variable quantity, and there a certain amount of delay (item 69, FIG. 6) between a downlink burst and a next following uplink burst (keeping up a dedicated channel after a last speech

sample packet is sent downlink from a core network for a time of such duration that a new uplink can be established utilizing a downlink from a core network). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Soulabail in the invention of Forssell since Soulabail provides a system where data is transferred downlink and uplink between a base transceiver station and a mobile station over a single channel through time division duplex, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of time division duplex in wireless communications since it conserves bandwidth by utilizing a single channel in both directions of communications, and Soulabail also provides a system that allows a variable guard time between downlink and uplink transmissions, and where a person of ordinary skill in the art at the time of the invention would appreciate the advantage of a variable guard time since it allows adaptations to changes in variable communication conditions.

As for Claim 2, Forssell teaches in paragraph [0042], lines 40-41, "the network is informed at the end of an active period, on whether a passive period follows the active period or if the connection can be released" (substantively the same as "the server determining when the last speech sample packet is sent" in the instant invention).

Forssell teaches in paragraph [0044], lines 53-54, "on an uplink channel, after one mobile station starts to transmit, the other mobile stations may be reallocated to other channels", and in lines 56-57, "on a downlink channel, after one mobile station

starts to transmit, the other mobile stations may be reallocated to other channels" (substantively the same as "determining whether a terminal taking part in the session needs a new uplink" and "establishing said new uplink is established" in the instant invention). Forssell does not teach "server sending at least one post-speech packet downlink to receiving terminals". Bender teaches these limitations.

In the same field of endeavor, Bender teaches in column 3, line 63 to column 4, line 6, if a maximum-zero-traffic period elapses without a data frame being sent to an access terminal, a wireless network transmits a null data frame to a subscriber stations, and if an access terminal does not successfully decode any data frame or null frame on a traffic channel for a specified number maximum-zero-traffic periods, the access terminal declares a loss of its connection with a base station and stops transmitting, (server sending at least one post-speech packet downlink to receiving terminals). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the invention of Bender in the invention of Forssell since Bender provides a method applicable in TDMA systems and for efficiently utilizing forward link and reverse link time slots in a wireless system so that wireless connections in use or may be used after a period of inactivity are maintained, and resources of connections that are inactive for too long or become out of range are released, which can be incorporated into the TDMA aspects of GSM involved in GPRS in the system of Forssell to efficiently maintain and release links based on current or recent usage so that resources are not reallocated too quickly or wasted.

As for Claim 22, Forssell in view of Bender and Soulabail as applied to Claims 1 and 2 teach all those limitations. Forssell further teaches a data storage medium encoded with software readable by a data processing device for performing actions.

Forssell further teaches in paragraph [0086], lines 40-42,47-49, "the processing of information in a telecommunication device takes place in an arrangement of processing capacity in the form of microprocessor(s) and memory in the form of memory circuits. Such arrangements are known as such from the technology of mobile stations and fixed network elements", and "On the network side, the features according to the invention can be implemented e.g. in the Packet Control Unit PCU", where "The packet control unit may be located e.g. in the … Serving GPRS Support Node SGSN" (substantively the same as "a data storage medium encoded with software readable by a data processing device for performing actions" in the instant invention).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, Soulabail, and further in view of Upp et al. (Pub. No.: US 2004/0002351 A1), hereafter referred to as Upp.

As for Claim 3, Forssell teaches in paragraph [0034], pages 53-54, that the "network sets the FBI field to '1' when it has no more RLC data blocks to send to the mobile station" (substantively the same as "receiving terminal…receiving the last speech sample packet" in the instant invention). Forssell does not teach that the receiving terminal signals the user. Upp teaches these limitations.

In the same field of endeavor, Upp teaches in paragraph [0003], "mobile communication device, which then alerts the user that the channel is open and the user may commence speaking" (substantively the same as "receiving terminal signals the user of the terminal" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the method and system for patching dispatch calling parties together and alerting users of Upp with the real time data network of Forssell since it will allow the network to efficiently form and connect talk groups for subscribers.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, Soulabail, and further in view of Lechleider (Patent Number: 6,058,109) and Rinchiuso et al. (Pub. No.: US 2004/0196861 A1), the last two references are hereafter referred to as Lechleider and Rinchiuso, respectively.

As for Claim 4, Forssell in view of Bender and Soulabail as applied to Claim 2 teach all those limitations. Forssell fails to teach a number of post-speech packets to send and intervals in which to send post-speech packets. Lechleider teaches a number of post-speech packets, and Rinchiuso teaches intervals in which to send post-speech packets.

In the same field of endeavor, Lechleider teaches in lines 34-36, column 6, of a system that "transmits at a rate of 2 packets per second" (substantively the same as "post-speech packets are sent…at intervals of 500 ms" in the instant invention). Lechleider teaches in lines 35-36, column 6, where a "uniform transmitter packet buffer

250 is 10 packets long", and Lechleider also teaches in lines 48-49, column 6, where a "packet buffer 330 initially waits until 10 packets have been stored before it initiates transmission", providing a situation where only 10 packets may be transmitted (substantively the same as "packets are sent…10 times" in the instant invention"). As indicated in line 28, column 6, these are illustrative examples, and Lechleider does not exclude that the buffers' operation could involve less than 10 packets (substantively the same as "packets are sent downlink 5 to 10 times" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the system of data transmission during link termination delays of Lechleider into the real time data network of Forssell since it would aid in maximizing the total data transmitted during the active period of a channel.

In the same field of endeavor, Rinchiuso teaches in paragraph [0031], "the delay period (X) is varied based on the data transmission rate. More particularly, as the data rate increases, the delay will increase proportionally. In the preferred embodiment of the present invention a delay of 200 msec is used for average data rates of 19 KBPS. The delay period is increased linearly to 500 msec for data rates of 100 KBPS. Varying the delay period in proportion to the data transmission rate" (substantively the same as "at intervals of 500 ms at most" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the channel dropping delay based on data rate system of Rinchiuso into the real time data network of Forssell since it "can cut down on the bouncing effect, while minimizing the time period a remote unit needlessly holds" a channel (see paragraph [0031] of Rinchiuso).

As for Claim 5, Forssell teaches in paragraph [0043], lines 49-51, "The network may use a timer function for determining whether a passive period follows the active period or if the connection can be released." "…when a predetermined time of inactive data transfer has passed, the TBF is released" (substantively the same as "after the last post-speech packet the downlink used is released after a delay specific to the cellular network" in the instant invention).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, Soulabail, Lechleider, Rinchiuso, and further in view of Schieder et al. (EP 1 139 613 A1), hereafter referred to as Schieder.

As for Claim 6, as discussed in the rejection of Claim 1, Forssell teaches a method and a terminal and an uplink. Forssell does not teach sending post-speech packet to the terminal that used the uplink. Schieder teaches these limitations.

In the same field of endeavor, Schieder teaches in paragraph [0035], lines 51-54, and FIG. 5a, page 23, after the mobile station side transmits the last data block on an uplink (see item ST5a1, FIG 5a), "the network side will first transmit a so-called packet uplink acknowledgement/negative acknowledgement message in step ST5a2 … to the subscriber terminal side" (substantively the same as "post-speech packets are also sent to the terminal that used the uplink" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication

system of Schieder since, in the network of Forssell, "the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users" (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel and network maintenance or information informing the mobile station that the network side has data packets addressed to the mobile station.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Bender, Soulabail, and further in view of Kajizaki et al. (Pub. No.: US 2001/0055317 A1), hereafter referred to as Kajizaki.

As for Claim 7, Forssell in view of Bender and Soulabail as applied to Claims 1 and 2 teach those limitations. Forssell fails to teach appending packets together. Kajizaki teaches these limitations.

In the same field of endeavor, Kajizaki teaches in the abstract, "When a routing processing unit detects the transmission of a … number of packets addressed to the same destination … A combining unit assembles a combined packet" (substantively the same as "sending terminal appends at least one post-speech packet to the last speech packet sent by it" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the packet combining of Kajizaki into the real

time data network of Forssell since packets below a certain size can result in unacceptable overhead and inefficient link performance.

Claims 8, 9, 15, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Cromer (Pub. No.: US 2003/0186703 A1), hereafter referred to as Cromer.

As for Claims 8 and 9, Forssell shows in paragraph [0006] and in Fig. 1a, page 14, the network of "a cellular radio system" (substantively the same as "cellular network" in the instant invention).

Forssell teaches in paragraph [0013], lines 38 and 41, that "a Temporary Block Flow (TBF) is created for transferring data packets on a packet data channel" for services that include "voice services" (substantively the same as "a last speech sample" in the instant invention).

Forssell shows in paragraph [0007], lines 51-55, and Fig. 1b, page 14, the "operational environment comprises one or more subnetwork service areas," which are interconnected by a backbone network and where each "subnetwork comprises a number of packet data service nodes", which provide a packet service for mobile data terminals 151 via several base stations 152" (substantively the same as "A server in a cellular network comprising a receiver configured to receive a last speech sample packet in an uplink direction" in the instant invention).

Forssell teaches in paragraph [0042], lines 40-41, that "the network is informed at the end of an active period, on whether a passive period follows the active period", and,

in paragraph [0044], lines 55-56, “on a downlink channel, after one mobile station starts to transmit, the other mobile stations may be reallocated to other channels”, showing that a passive period can occur after an active period on an uplink channel and on a downlink channel, and a mobile station of the downlink channel can start transmitting on the channel (substantively the same as “a server or a processing device configured to prolong the existence of downlinks for a time of such duration that at least one new uplink can be established from a receiving terminal” in the instant invention). Forssell does not teach “by sending post-speech packets”. Cromer teaches these limitations.

In the same field of endeavor, Cromer teaches in paragraph [0010], of a “client device” connected “on a wireless local area network (WLAN)”, wherein the client device can receive a type of incoming packet called a “”ping” packet for maintaining a connection between the client device and the WLAN”, where a “ping” packet originates from the WLAN, different from a data packet, which can originate from another user (substantively the same as “by sending the post-speech packets to at least one terminal connected to a session” in the instant invention). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the bandwidth throttle of Cromer in the real time data network of Forssell since this would allow the network to have low-power maintenance of inactive connections and the ping packets can be used by the network of Forssell to send updates to the mobile device to inform the mobile device if the downlink TBF release indication of the last RCL data block has become invalid and the channel needs to be persevered before the downlink TBF release procedures are complete.

As for Claims 15 and 16, Forssell shows in paragraph [0006] and in Fig. 1a, page 14, the network of "a cellular radio system" (substantively the same as "cellular network" in the instant invention).

Forssell shows in paragraph [0007], lines 51-55, and Fig. 1b, page 14, the "operational environment comprises one or more subnetwork service areas," which are interconnected by a backbone network and where each "subnetwork comprises a number of packet data service nodes", which provide a packet service for mobile data terminals 151 via several base stations 152" (substantively the same as "A server in a cellular network comprising a receiver configured to receive a last speech sample packet in an uplink direction" in the instant invention).

Forssell teaches in paragraph [0042], lines 40-41, that "the network is informed at the end of an active period, on whether a passive period follows the active period", and, in paragraph [0044], lines 55-56, "on a downlink channel, after one mobile station starts to transmit, the other mobile stations may be reallocated to other channels", showing that a passive period can occur after an active period on an uplink channel and on a downlink channel, and a mobile station of the downlink channel can start transmitting on the channel (substantively the same as "configured to maintain a dedicated channel between a sending terminal and a receiving terminal for such a time duration that a new dedicated channel can be established utilizing said earlier dedicated channel" in the instant invention). Forssell does not teach "by sending post-speech packets". Cromer teaches these limitations.

In the same field of endeavor, Cromer teaches in paragraph [0010], of a “client device” connected “on a wireless local area network (WLAN)”, wherein the client device can receive a type of incoming packet called a “”ping” packet for maintaining a connection between the client device and the WLAN”, where a “ping” packet originates from the WLAN, different from a data packet, which can originate from another user (substantively the same as “by sending post-speech packets” in the instant invention). It would have been obvious to one of ordinary skill in the art at the time of the invention to adopt the bandwidth throttle of Cromer in the real time data network of Forssell since this would allow the network to have low-power maintenance of inactive connections and the ping packets can be used by the network of Forssell to send updates to the mobile device to inform the mobile device if the downlink TBF release indication of the last RCL data block has become invalid and the channel needs to be persevered before the downlink TBF release procedures are complete.

As for Claim 19, Forssell teaches in paragraph [0062], lines 28-30, and FIG. 5, page 16, “When the CV' value is set to "0" the network interprets it so that the first mobile station has no more RLC data blocks to be transmitted at the time and the network may therefore give the next N uplink transmit permissions to some other mobile station/stations”, and, in lines 34-35, “If the mobile station does not have data to be transmitted, to the network at the time, the mobile station may omit the uplink transmit permission or it may transmit a Packet Dummy Control Block or a signalling message”

(substantively the same as "an element for sending post-speech packets is a terminal ending its transmission" in the instant invention).

Claims 10, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Cromer, and further in view of Lechleider (Patent Number: 6,058,109) and Rinchiuso et al. (Pub. No.: US 2004/0196861 A1), the last two references are hereafter referred to as Lechleider and Rinchiuso, respectively.

As for Claim 10, the Forssell in view of Cromer as applied to Claim 9 teach all those limitations. Forssell fails to teach a number of post-speech packets to send and intervals in which to send post-speech packets. Lechleider teaches a number of post-speech packets to send, and Rinchiuso teaches intervals in which to send post-speech packets.

In the same field of endeavor, Lechleider teaches in lines 34-36, column 6, of a system that "transmits at a rate of 2 packets per second" (substantively the same as "post-speech packets are sent…at intervals of 500 ms" in the instant invention). Lechleider teaches in lines 35-36, column 6, where a "uniform transmitter packet buffer 250 is 10 packets long", and Lechleider also teaches in lines 48-49, column 6, where a "packet buffer 330 initially waits until 10 packets have been stored before it initiates transmission", providing a situation where only 10 packets may be transmitted (substantively the same as "packets are sent…10 times" in the instant invention"). As indicated in line 28, column 6, these are illustrative examples, and Lechleider does not exclude that the buffers' operation could involve less than 10 packets (substantively the

same as "packets are sent downlink 5 to 10 times" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the system of data transmission during link termination delays of Lechleider into the real time data network of Forssell since it would aid in maximizing the total data transmitted during the active period of a channel.

In the same field of endeavor, Rinchiuso teaches in paragraph [0031], "the delay period (X) is varied based on the data transmission rate. More particularly, as the data rate increases, the delay will increase proportionally. In the preferred embodiment of the present invention a delay of 200 msec is used for average data rates of 19 KBPS. The delay period is increased linearly to 500 msec for data rates of 100 KBPS. Varying the delay period in proportion to the data transmission rate" (substantively the same as "at intervals of 500 ms at most" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the channel dropping delay based on data rate system of Rinchiuso into the real time data network of Forssell since it "can cut down on the bouncing effect, while minimizing the time period a remote unit needlessly holds" a channel (see paragraph [0031] of Rinchiuso).

As for Claim 20, Forssell in view of Cromer as applied to Claim 16 teach those limitations. Forssell fails to teach a number of post-speech packets to send and intervals in which to send post-speech packets. Lechleider teaches a number of post-speech packets to send, and Rinchiuso teaches intervals in which to send post-speech packets.

In the same field of endeavor, Lechleider teaches in lines 34-36, column 6, of a system that "transmits at a rate of 2 packets per second" (substantively the same as "post-speech packets are sent…at intervals of 500 ms" in the instant invention). Lechleider teaches in lines 35-36, column 6, where a "uniform transmitter packet buffer 250 is 10 packets long", and Lechleider also teaches in lines 48-49, column 6, where a "packet buffer 330 initially waits until 10 packets have been stored before it initiates transmission", providing a situation where only 10 packets may be transmitted (substantively the same as "packets are sent…10 times" in the instant invention"). As indicated in line 28, column 6, these are illustrative examples, and Lechleider does not exclude that the buffers' operation could involve less than 10 packets (substantively the same as "packets are sent downlink 5 to 10 times" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the system of data transmission during link termination delays of Lechleider into the real time data network of Forssell since it would aid in maximizing the total data transmitted during the active period of a channel.

In the same field of endeavor, Rinchiuso teaches in paragraph [0031], "the delay period (X) is varied based on the data transmission rate. More particularly, as the data rate increases, the delay will increase proportionally. In the preferred embodiment of the present invention a delay of 200 msec is used for average data rates of 19 KBPS. The delay period is increased linearly to 500 msec for data rates of 100 KBPS. Varying the delay period in proportion to the data transmission rate" (substantively the same as "at intervals of 500 ms at most" in the instant invention). It would have been obvious to one

skilled in the art at the time of the invention to adopt the channel dropping delay based on data rate system of Rinchiuso into the real time data network of Forssell since it "can cut down on the bouncing effect, while minimizing the time period a remote unit needlessly holds" a channel (see paragraph [0031] of Rinchiuso).

As for Claim 21, Forssell teaches in paragraph [0043], lines 49-51, "The network may use a timer function for determining whether a passive period follows the active period or if the connection can be released." "...when a predetermined time of inactive data transfer has passed, the TBF is released" (substantively the same as "after a last post-speech packet said earlier dedicated channel is arranged to be released after a delay specific to the network" in the instant invention).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Cromer, Lechleider, Rinchiuso, and further in view of Schieder et al. (EP 1 139 613 A1), hereafter referred to as Schieder.

As for Claim 11, as discussed in the rejection of Claim 8, Forssell in view of Cromer teaches a server and post-speech packets. Forssell does not teach information intended for the user terminal in the post-speech packet. Schieder teaches these limitations.

In the same field of endeavor, Schieder teaches in paragraph [0052], lines 37-38, "the entry of a new data packet in the network side transmitter queue is not detected", then, in lines 40-42, "the network side can also transmit a signalling message to the

subscriber terminal side and in association therewith a transmitter queue information" (substantively the same as "include in post-speech packets information intended for the user of the terminal" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication system of Schieder since, in the network of Forssell, "the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users" (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel and network maintenance or information informing the mobile station that the network side has data packets addressed to the mobile station.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Schieder.

As for Claim 12, Forssell shows in paragraph [0084], and FIG. 10, page 20, shows a "block diagram of a mobile station 100", where a control unit (item 103) is substantively the same as the control unit of applicant, a RR-receiver, A/D-converter (item 111) is substantively the same as the receiver RX of applicant, a memory (item 104) is substantively the same as the memory of applicant, a modulator, RF-transmitter

(item 123) is substantively the same as the transmitter TX of applicant, and a keyboard (item 131) and a display (item 132) are substantively the same as the user interface UI of applicant (substantively the same as "cellular terminal, comprising a control unit configures to recognize and/or transmit post-speech packets" in the instant invention). Forssell does not teach a terminal recognizing post-speech packets. Schieder teaches these limitations.

In the same field of endeavor, Schieder shows in paragraph [0035], lines 51-56, and in FIG. 5a, page 23, "the network side will first transmit a…message in step ST5a2", where "The message in step ST5a2 is to indicate to the subscriber terminal side", implicitly teaching that the subscriber terminal side, after sending data packets, can understand received non-data packets sent from the network side (substantively the same as "recognize and/or transmit post-speech packets" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication system of Schieder since, in the network of Forssell, "the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users" (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel

and network maintenance or information informing the mobile station that the network side has data packets addressed to the mobile station.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Schieder, and further in view of Upp.

As for Claim 13, Forssell teaches in paragraph [0034], pages 53-54, that the "network sets the FBI field to '1' when it has no more RLC data blocks to send to the mobile station" (substantively the same as "after receiving a last speech sample packet" in the instant invention). Forssell does not teach that the receiving terminal signals the user. Upp teaches these limitations.

In the same field of endeavor, Upp teaches in paragraph [0003], "mobile communication device, which then alerts the user that the channel is open and the user may commence speaking" (substantively the same as "a control unit further configures to perform signaling" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the method and system for patching dispatch calling parties together and alerting users of Upp with the real time data network of Forssell since it will allow the network to efficiently form and connect talk groups for subscribers.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Schieder, and further in view of Kajizaki.

As for Claim 14, Forssell in view of Schieder as applied to Claim 12 teach all those limitations. Forssell fails to teach appending packets together. Kajizaki teaches these limitations.

In the same field of endeavor, Kajizaki teaches in the abstract, "When a routing processing unit detects the transmission of a … number of packets addressed to the same destination … A combining unit assembles a combined packet" (substantively the same as "where the received post-speech packets are appended to speech sample packets" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to adopt the packet combining of Kajizaki into the real time data network of Forssell since packets below a certain size can result in unacceptable overhead and inefficient link performance.

Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forssell in view of Cromer, and further in view of Schieder.

As for Claim 17, as discussed in the rejection of Claim 15, Forssell in view of Cromer teaches a network post-speech packets. Forssell does not teach that non-speech packets are sent from a server operating in the network. Schieder further shows these limitations.

Schieder further shows in paragraph [0035], lines 51-54, and FIG. 5a, page 23, item ST5a2, that the network side will transmit a non-data message to the subscriber terminal after the subscriber terminal has finished sending data packets. Schieder also shows in paragraph [0087], lines 22-26, and FIG. 10, page 29, item ST102, that the

network side NS will transmit a non-data packet after the network side NS has finished sending data packets. In both cases, it is not specified which network side (NS) element of FIG. 1, page 18, sends the non-data message and packet. As a result, Schieder implicitly teaches that any one of the network side (NS) element could be the origination of the non-data message or packet. Schieder teaches in paragraph [0006], lines 50-55, and FIG. 1, that a network side (NS) element is a SGSN, where a "node SGSN (SGSN: Serving GPRS Support Node) is provided which is interfaced via interfaces Gb, Gs, Gr with the base station controller BSC, the mobile switching centre MSC and the home location register HLR. Via the SGSN node an IP backbone network can be accessible in the conventional mobile communication network." (Substantively the same as "an element for sending post-speech packets is a server operating in the network" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication system of Schieder since, in the network of Forssell, "the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users" (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel and network maintenance or information

informing the mobile station that the network side has data packets addressed to the mobile station.

As for Claim 18, Forssell in view of Cromer and Schieder as applied to Claim 17 teach all those limitations. Forssell fails to teach a router server. Schieder further shows these limitations.

Schieder further shows in FIG. 2, page 19, that the SGSN (see also FIG. 1, page 18, item SGSN) operates with the Layer 3, IP-based protocols SNDCP and GTP, teaching that the SGSN provides routing functions (substantively the same as "the server sending post-speech packets is a router server" in the instant invention). It would have been obvious to one skilled in the art at the time of the invention to combine aspects of the real time data network of Forssell with the network controller and communication system of Schieder since, in the network of Forssell, "the physical connection of a packet radio service is kept reserved during the passive periods of a session but the same physical resources can still be shared between multiple users" (see abstract of Forssell), and the uplink acknowledgement/negative acknowledgement message of the network of Scheider can be used in the system of Forssell so that a network side can acknowledge to a transmitting mobile station that the last data packet is received in the uplink channel and can also contain information related to channel and network maintenance or information informing the mobile station that the network side has data packets addressed to the mobile station.

Response to Arguments

Applicant's arguments filed 02/19/2008 have been fully considered but they are not persuasive. Applicants submit that modifying of the bandwidth in Cromer is seen to require signaling which would likely increase packet delays, and that the modification of Forssell in view of Cromer would have decreased the performance of Forssell by increasing the delay. Examiner respectfully disagrees that Cromer teaches explicitly or implicitly that modification of the bandwidth in Cromer require signaling which would likely increase packet delays. Cromer teaches in paragraph [0029], and in FIG. 2, that a first data packet is received at a lowest bandwidth, and a client device then sets a client device's bandwidth to a highest permissible by protocol (item 44, FIG. 2), and subsequent data packets are then received at a highest bandwidth until an idle state of packet transmission is detected (items 46 and 48, FIG. 2), indicating no further packets are being transmitted. Cromer does not teach in paragraph [0029], or in any step in FIG. 2, or elsewhere, that signaling is involved in the process of modifying the bandwidth. The first received data packet **in itself** acts as a catalyst in causing the system of Cromer to modify bandwidth, since the receiving of any data packet is activity and is evident in itself as activity and is what causes a change from an idle state to activity.

Applicants also submit that that a "ping" packet as disclosed in Cromer necessitates a response from a device which a ping is addresses, and that such a required response to a ping by a terminal in Forssell would likely interfere with a determination of passive and active periods and at least change the principle of

operation of the reference. Examiner respectfully disagrees. Forssell teaches in paragraph [0079], “During the passive periods in downlink delay sensitive data transfer the network may assign downlink transmission permissions to other mobile stations and thus the network can transmit data to other mobile stations”, and Forssell also teaches in paragraph [0080], “The network transmits a signalling message such as a PACKET DOWNLINK ASSIGNMENT”, and Forssell also teaches in paragraph [0003], "a denomination "delay sensitive data" is used for data flows that should be transferred on real time basis and that may have passive periods during which the data flow is suspended”, implicitly teaching that downlink transmission permissions that are sent to other mobile stations during the passive periods do not cause the passive periods to become active period since “passive periods” only apply to real time user data, and not to messages containing only control information, such as signaling messages involved in downlink transmission permissions. Since a “ping” packet and a response to a “ping” packet of the system of Cromer are substantively the same as signaling messages since they only maintain connections and do not contain real time user data, a “ping” packet and a response to a “ping” packet of the system of Cromer would not interfere with a determination of passive and active periods of the system of Forssell, since the system of Forssell could recognize them as signaling messages, and they would not change the principle of operation of the system of Forssell.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Federkins et al. (Patent Number: 5,959,982) teaches in column 7, lines 7-12, a guard band may be lengthened and variable guard bands may be provided.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA SMITH whose telephone number is (571)270-1826. The examiner can normally be reached on Monday-Thursday 9:30am-7pm, Alternating Fridays 9:30am-6pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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